

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listing of claims in the application.

1. (currently amended) ~~In combination with a powered opto-electronics unit within which optical signals are generated for determination of smoke density at a test location spaced therefrom a~~ A smoke detector system comprising; :

a powered opto-electronics unit within which optical signals are generated for determination of smoke density;

a passive sensor remotely located from the opto-electronics unit, said passive sensor including a housing having openings and enclosing an air gap exposed through said openings at said test location to smoke;

a fiber optics cable interconnecting said opto-electronics unit and said passive sensor;

collimating lens means mounted within the housing at one axial end thereof and connected to the fiber optics cable for transmission of said generated optical signals into the housing ~~confined to the air gap~~ along an optical axis longitudinally centered in said passive sensor; and,

focusing mirror means mounted within the housing at an opposite axial end of the housing for reflection of the optical signals along said optical axis, through the air gap and the lens means and into the fiber cable to be returned to the opto-electronics unit.

2. (currently amended) The ~~combination system~~ system as defined in claim 1, wherein

the opto-electronics unit further includes:

light emitting diode means for generation of the optical signals within a predetermined optical spectrum;

receiver means for detecting varying effects of the smoke on the optical signals returned through the fiber cable; and,

optical coupler means connected to the receiver means, ~~the fiber cable and the light emitting diode means for transmission of the optical signals therebetween.~~

3. (currently amended) The ~~combination~~ system as defined in claim 2, wherein the receiver means includes:

signal divider means connected to optical coupler means for splitting transmission of the light signals received therefrom along two signal paths;

filter means within one of said signal paths for passage of only the optical signals with an upper half of the optical spectrum;

detector means for respectively detecting the optical signals transmitted from the filter means and along the other of said signal paths; and,

signal processing means connected to said detector means for converting the optical signals received therefrom into an output signal reflecting obscuration of the air gap by the smoke received therein.

4. (canceled) A smoke detector system comprising:

a powered opto-electronic unit within which optical signals are generated for determination of smoke density at a test location spaced therefrom; and passive sensor

means connected by a fiber cable to the opto-electronics unit for sensing smoke received therein at said test location; said opto-electronic unit including: light emitting diode means for generation of the optical signals within a predetermined optical spectrum; receiver means for detecting varying effects of the smoke on the optical signals returned through the fiber cable; and optical coupler means connected to the receiver means.

5. (canceled) The smoke detector as defined in claim 4, wherein the receiver means includes: signal divider means connected to optical coupler means for splitting transmission of the light signals received therefrom along two signal paths; filter means within one of said signal paths for passage of only the optical signals with an upper half of the optical spectrum; detector means for respectively detecting the optical signals transmitted from the filter means and along the other of said signal paths; and signal processing means connected to said detector means for converting the optical signals received therefrom into an output signal reflecting obscuration of an air gap in the sensor by the smoke received therein.